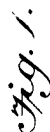


2 Sheets—Sheet 1.

No. 546,166.

Patented Sept. 10, 1895.



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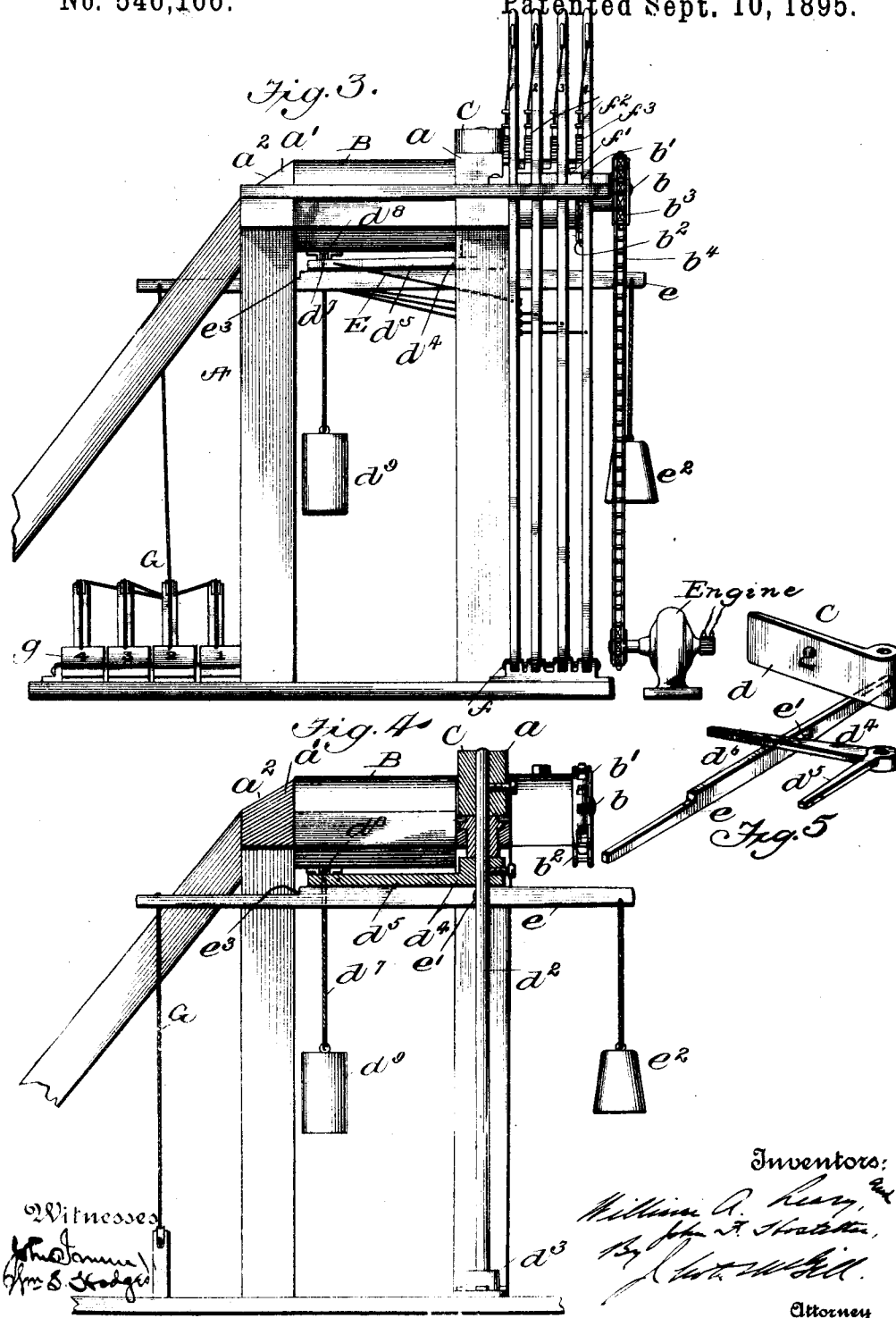
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2 Sheets—Sheet 2.

No. 546,166.

Patented Sept. 10, 1895.



# UNITED STATES PATENT OFFICE.

WILLIAM A. LEARY, OF NORFOLK, AND JOHN F. HOSTETTER, OF SUFFOLK,  
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## CONVEYER AND ASSORTER.

SPECIFICATION forming part of Letters Patent No. 546,163, dated September 10, 1895.

Application filed January 31, 1895. Serial No. 536,874. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM A. LEARY, of Norfolk, in the county of Norfolk, and JOHN F. HOSTETTER, of Suffolk, in the county of Nansemond, State of Virginia, have invented certain new and useful improvements in Conveyers and Assorters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention contemplates certain new and useful improvements in conveyers and assorters. It is especially designed for lumber, but is applicable for other materials.

The object of the invention is to provide a conveyer and assorter in which the passage of the lumber or the like will not be retarded by reason of frictional contact in guideways, one in which there is but one continuous passage-way and in which articles of various sizes may be discharged from said passage-way at any one of a series of points at the will of the operator. A further object is to provide a machine of this nature in which but a minimum number of parts are employed, one that is free from all complication, is strong and durable and not liable to readily get out of order or to be deranged. These objects we accomplish by providing a suitable longitudinal frame of any desired length having a single passage-way in which are transverse revolving rollers or their equivalents. At periodical distances apart are pivoted shunts normally in alignment with one side of the passage-way and all of which are under the control of the operator, so that any one of said shunts may be thrown obliquely across the passage-way in the line of travel and cause the discharge of the lumber or the like at one or both sides of the conveyer. The discharged lumber or the like will effect the automatic return of the shunt to its normal position unless the latter be held locked by the operator for the purpose of effecting further discharge at the same point. All of these shunts should be in their normal positions when it is desired to discharge lumber at the far end of the conveyer, to be conveyed to what is called the "bill-timber" pile, or to storage sheds, bins, &c.

The invention comprises the novel features

of construction and also the detail combination and arrangement of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view. Fig. 2 is a side elevation, slightly enlarged and with parts broken away. Fig. 3 is a transverse sectional view on the line  $xx$ , Fig. 1. Fig. 4 is an end view. Fig. 5 is a detail.

Referring to the drawings, A designates the framework composed of suitable boards, beams, and braces. The upper part of this framework consists of two parallel sides  $a$  and  $a'$ , running longitudinally the full length of the machine and forming a continuous passage-way. The upper edge of side  $a'$  is preferably beveled outwardly, as at  $a^2$ .

B designates a series of rollers arranged transversely within the passage-way of the frame and having their journals supported by the parallel sides thereof. The journal  $b$  of each roller is extended beyond the side  $a$  of frame A, and upon its extended end is keyed a sprocket-wheel  $b'$ , with all of which wheels engages a continuous sprocket-chain  $b^2$ . The journal of the first one of these series of rollers has a second sprocket-wheel  $b^3$  thereon, with which engages the drive-chain  $b^4$ , operated by an engine or dynamo or other suitable motor. All the rollers of the series are caused to revolve simultaneously.

C designates a series of shunts arranged at suitable distances apart according to the distance between the several dumps or points of discharge, each of which latter is usually opposite or in front of a kiln when the machine is used for assorting and conveying lumber. These shunts are all under the control of the operator, who by throwing any one of said shunts into operation can effect the dumping or discharge at any of the series of dumps, in the case of lumber according to the sizes of the boards making up each dump. Each shunt consists of an arm  $d$ , preferably oblong and so arranged that when extended obliquely across the passage-way the broad face thereof will be presented to the articles, such as boards or lumber carried by the conveyer, and when in its normal position said arm fits in a cut-away portion or recess  $d'$  in side  $a$ .

At one end this arm is keyed to a vertical shaft  $d^2$  mounted in suitable bearings  $d^3$  and upon said shaft is fastened an approximately bell-crank lever  $d^4$  having a short arm  $d^5$ , and a long arm  $d^6$ . To the short arm is connected an operating cord or rope E, by which the shaft  $d^2$  may be caused to partially rotate sufficiently far to throw the shunt-arm obliquely across the top of the conveyer. Also connected to this short arm is a rope  $d^7$ , which is passed over a roller  $d^8$  and has a weight  $d^9$  at its free end. This weight serves to hold the parts in their normal position—that is, retains the shunt-arm in the recess of the side  $a$ . A locking and tripping lever  $e$  is fulcrumed at  $e'$  to one of the frame-bars and is extended transversely beneath the passage-way. A weight  $e^2$  is connected at one end of this lever and serves to hold the top edge of the latter against the under side of the long arm  $d^6$ . A portion of said top edge is cut away to form a shoulder  $e^3$ , against which arms  $d^6$  will bear when the bell-crank lever is pulled forward. In this way the shunt-arm is held or locked in place when thrown across the passage-way. The end of the long arm of the lever  $e$  extends beyond the side  $a'$  of frame A and is in the path of the discharge from the conveyer. The lumber or the like striking against said lever will free the long arm of the bell-crank lever and permit the shunt-arm to return to its normal position under the action of weight  $d^9$ . While we have specified weights as acting upon these two levers  $d^4$  and  $e$ , yet it is obvious that springs can be used with equally advantageous results. It will be understood that each shunt is constructed with operating mechanism such as above described. By merely duplicating the shunt-arms—that is, making two arms instead of one—the discharge can be effected on either or both sides of the conveyer. The operating ropes E—one for each shunt—all extend beneath the top of the frame to the rear end of the latter. Each rope is connected to one of a series of upright levers F, fulcrumed at  $f$  and extended upwardly through a slatted frame  $f'$ . Each lever carries an ordinary lever-operated pawl  $f^2$ , designed to engage a toothed rack  $f^3$ , whereby each lever may be held in the desired position. These levers are preferably numbered from one (1) to four (4), and the shunts are correspondingly numbered, so that by pulling rearward on any one of these levers the corresponding shunt will be thrown across the passage-way of the conveyer. If the lever is held locked, the shunt will not be automatically returned to its normal position by the discharge; but in order to enable the operator to trip any shunt previously set or locked a rope G is connected to the free end of each lever  $e$ , and all of said ropes are carried to the rear end of the machine and connected to foot-treadles  $g$  or other suitable devices under the control of the operator. These treadles are also numbered to correspond with the

shunts, so that if the operator desires to throw any one of the latter out of use after having previously locked the operating-lever it is only necessary to release the latter and then operate the corresponding foot-treadle, thus releasing the trip or locking lever. Thus it will be seen that all the shunts and their operating mechanism are under the direct control of the operator. In practice but one shunt is operated at a time, according to the point at which it is desired to effect the discharge. For instance, in conveying and assorting lumber the front dump may be for one-half-inch boards, the second for one-inch, the third for one-and-one-half-inch, and the fourth for two-inch boards. Hence, if the boards placed on the receiving end of the conveyer are of the one-inch class the operator moves lever No. 2, throwing shunt No. 2 across the passage-way, and the boards upon coming in contact therewith will be caused to fall over the side  $a'$ . If the operating-lever has not been locked by its pawl, the shunt will be returned to its normal position by the tripping of the lever  $e$ , which is operated by the discharged lumber. The next lot of boards may be for shunt No. 3, and if so the corresponding lever is operated. If more than one lot is to be deposited at this point, the operating-lever is locked in position by its pawl, and after the full discharge has been effected the lever is freed and the treadle of the trip cord or rope of shunt No. 3 is operated to allow the latter to assume its normal position. Such lumber, designated as "bill or framing timber"—namely, pieces of odd lengths and sizes—is not to be dumped at any one of the series of dumps above described, but is intended to be collected at a point beyond the far end of the machine. Therefore to that end of the machine we connect an incline H, which leads away from the machine a suitable distance. When bill-timber is placed upon the receiving end of the conveyer, all the shunts are thrown out of use, and thus a clear uninterrupted passage is allowed such timber, which, upon reaching the far end of the conveyer, will fall onto the incline, and by reason of the impetus thus derived will be carried a considerable distance toward or to the bill-timber yard. At each dumping-point can be placed the ordinary transfer cars and tracks for conveying the assorted lumber to the adjacent kilns or elsewhere, all of which is well understood and is not, therefore, either shown or described.

It will be understood that changes may be made in the details of construction and also in the operating mechanism of our conveyer and assorter without departing from the scope or spirit of the invention, and hence we do not restrict ourselves to the exact means above described. This is particularly true as regards the means for operating the series of shunts. It is obvious that in lieu of levers and ropes such as we have shown and described a series of magnets in electric circuits

may be employed, the circuit-closing keys being under the control of the operator. Other changes might be mentioned; but in all instances each shunt must be capable of independent operation by the operator.

The advantages of our invention are apparent to those skilled in the art to which it appertains, and it will be particularly observed that by means thereof the proper assortment and distribution of lumber and the like can be quickly accomplished.

It will be particularly noted that there is but one passage-way for the lumber—that is, no matter what the sizes or dimensions of the boards, they are all placed on the conveyer at the same point and not between parallel guides, which retard the passage of the lumber by reason of friction and in the case of warped boards serve to retard the operation of the machine.

Our improved conveyer and assorter can be used for other purposes than lumber, and a belt or other carrier means may be substituted for or used in conjunction with the series of rollers.

We claim as our invention.

1. A conveyer and assorter having a passage-way, conveying means in said passage-way, a shunt capable of being extended across said passage-way, operating means connected to said shunt, and a trip therefor designed to be operated by the discharge effected by said shunt whereby the latter is automatically released and returned to its normal position, substantially as set forth.

2. A conveyer or assorter having a passage-way, conveying means in said passage-way, a series of periodically arranged shunts normally in line with one side of said passage-way, means for positioning said shunts across said passage-way, means for locking the same, and means for tripping said locking means, both said tripping means and means for operating said shunts being under the control of a single operator at one end of the conveyer, substantially as set forth.

3. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunts normally in line with one side of said passage-way, means connected to said shunts for positioning the same across said passage-way, means for locking said shunts, and a series of levers with which said means for positioning said shunts are connected, substantially as set forth, each of said locking means being capable of being operated or unlocked by the discharge effected by the respective shunts, as stated.

4. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunts consisting of arms normally in line with one side of said passage-way, a shaft to which each of said shunt-arms is connected, an arm

extending from said shaft, a locking lever for holding said arm when the shunt-arm is positioned across said passage-way, and an operating rope and lever for each of said shunts, whereby the shafts of the latter may be turned and the shunt-arms positioned across said passage-way, substantially as set forth.

5. A conveyer and assorter having a passage-way, a series of rollers therein, means for rotating all of said rollers, a series of shunt-arms pivoted each at one end, a shaft therefor, a bell-crank lever on said shaft, a pivoted locking lever, means for returning said shunt arms to their normal positions when unlocked, and means for operating each of said shunt-arms independently from a single point, substantially as set forth.

6. The combination with the frame having a series of revolving rollers, of a series of independent shunts, shafts carrying said shunts, and a series of independent operating ropes and levers connected to said shafts, whereby each of said shunts may be operated independently of the other, all of said levers being at one end of said frame, substantially as set forth.

7. The combination with the frame having a series of revolving rollers, of a series of independent shunts, shafts carrying said shunts, bell-crank levers also carried by said shafts, locking levers provided with upper shoulders and having each one end extended beyond one side of the frame in the line of discharge, operating ropes connected to said bell-crank levers, operating levers to which said ropes are connected, and means for normally holding said shunt-arms in line with one side of said frame, substantially as set forth, said locking levers being designed to be disengaged from said bell-crank levers by the discharge effected by the respective shunt-arms, as stated.

8. The combination with the frame having an upper passage-way, and a series of revolving rollers, of a series of independent arms pivoted each at one end and normally on a line with one side of said passage-way, means for locking each of said arms across said passage-way, a rope and lever for operating each of said arms independently of the other, and means connected to each of said locking means for freeing said arms said means comprising ropes and treadles arranged at one end of the frame adjacent to said operating levers, said arms and said treadles being in corresponding series, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILLIAM A. LEARY.  
JOHN F. HOSTETTER.

Witnesses:

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W. P. GALLOWAY.